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10/033,512	12/27/2001	Pramod V.N. Koppol	2	8651

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Docket Administrator (Room 3J-219)  
Lucent Technologies Inc.,  
101 Crawfords Corner Road  
Holmdel, NJ 07733-3030

EXAMINER
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LEVITAN, DMITRY

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

ix  
Application No.

10/033,512

Applicant(s)

KOPPOL, PRAMOD V.N.

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### *Drawings*

1. The drawings were received on 03/20/02. These drawings are not approved.
2. Figures 1 -4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: another port card 86 on page 16.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

5. The disclosure is objected to, because abbreviations or acronyms OSPF and PNNI are cited throughout the specification without explanation. Applicant should provide a full explanation for the acronyms at least at their first occurrence in the specification.

*Claim Objections*

6. The numbering of claims is not in accordance with 37 CFR 1.126, because the original numbering of the claims is incorrect missing claim number 10. Misnumbered claims 11-20 been renumbered 10-19. Applicant is required to refer to the new numbers in the response to the Office Action. Claims 15-17 are objected as being duplicates of the claims 5, 4 and 8. Appropriate correction is required. Claims 2, 5-7, 10, 13, 14, 16 and 18 are objected to because the cited acronyms OSPF, PNNI, ISIS, LSA and intra-AS in the claims should be fully explained.

*Claim Rejections - 35 USC § 112*

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and 18 limitations “delegate port cards having selected software functionality of said (intra-AS in claim 18) link state routing protocol are unclear, because it is not understood what portions of the link state routing protocol belong to the selected software.

Claims 4 and 15 limitations “said port card is operable to distribute link state advertisements assigned thereto” is unclear, because the claim is incomplete, missing the essential steps of the distribution action, as the targets/recipients of the LSA distribution, and the assigning action, as how the LSA are assigned.

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Claim 7 limitation “delegate port cards are operable to provide retransmission timers and acknowledgements for LSA updates” is unclear, because it is not understood what is retransmission timer.

Claim 10 limitation “port cards provide retransmission and acknowledgement service related thereto” is unclear, because it is not understood what is retransmitted, what is an acknowledgement service and how they are related.

Claim 13 limitation “wherein LSA updates from delegate port cards are preprocessed before being sent to said controller” is unclear, because it is not understood what modifications of LSA is considered preprocessing.

Claim 14 recites the limitation "said port card" in line 8. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-8 and 14-17 are rejected (as best understood) under 35 U.S.C. 102(e) as being anticipated by Ren (US 2003/0056138).

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13. Regarding claims 1, 2, 14, Ren teaches an apparatus for communicating a link state routing protocol with nodes in a network (router 11, providing OSPF routing with nodes 15 in the system 10 on Fig. 1 and [0021]), comprising:

A controller having at least one processor associated therewith for performing route calculation and maintaining a link state database of said network (active card 12 on Fig. 1, implemented as a processor [0023], performing OSPF operations as calculating the shortest path from a router to a destination network and updating link state data base information, as shown on Fig. 2 and [0026] – [0027]); and

At least one delegate port card coupled to said controller and having at least one separate processor associated therewith (backup/standby card 18 on Fig. 2, implemented as a separate processor [0023]) said delegate port card having selected software functionality of said link state routing protocol assigned thereto (standby card 18 is a redundant card to the active card 12, mirroring it [0025]), said delegate port card operable to process communications associated with said selected software functionality substantially independently of said controller (in case of the active card 12 failure, standby card 18 can immediately take over all the operations performed by active OSPF control card 12 [0025]).

In addition, regarding claim 14, Ren teaches connecting both cards 12 and 18 to a line card [0023], and updating a standby card 18 by the synchronization state machine on active card 12 failure as shown on Fig. 2 and [0026], in which standby OSPF control card 18 takes over OSPF operations.

14. Regarding claim 3, Ren teaches updating said controller when a state change occurs (sending all OSPF messages and updates to the active card 12 [0025]).

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15. Regarding claims 4 and 15 (as best understood), Ren teaches said port card is operable to distribute link state advertisements assigned thereto and to perform acceptance checks for said LSA served thereby (standby card 18 inherently verifies/checks and distributes the received LSA to the link state data base, because when the standby card is activated [0011], it performs all the OSPF functions [0006]).

16. Regarding claims 5 and 16, Ren teaches said delegate card is operable to process incoming LSA updates (standby card 18 receives all OSPF updates and inherently process them after taking over the failed active card 12 [0025] and OSPF updates include LSAs [0037]).

17. Regarding claim 6, Ren teaches said delegate card is operable to perform refresh functionality for associated LSAs (comparing the LSAs of the active card database with the backup card database copies and requesting the most recent /newer LSAs [0037]).

18. Regarding claim 7, Ren teaches delegate port cards to provide retransmission timers and acknowledgements for LSA updates (inherently part of the data base synchronization between the active and standby cards, incorporated into Ren teachings from RFC 2328, wherein the age of LSA is checked and the updates of LSA are requested by a standby card [0037]).

19. Regarding claims 8 and 17, Ren teaches delegate port card sending and receiving of hello packets (standby card 18 transmits and receives all OSPF updates including hello packets [0006] after taking over the failed active card 12 [0025]).

20. Regarding claim 13, Ren teaches preprocessing LSA updates from delegate port cards before sending them to the controller (inherently part of the system, because the standby cards attach the appropriate header to the LSA sent to the active card for the age comparison [0034]).

*Claim Rejections - 35 USC § 103*

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ren in view of Admitted Prior Art (OSPF protocol overview disclosed on pages 1, 2, 4-8).

Ren substantially teaches the limitations of claim 18 (see claims 1 and 14 rejection above).

Ren does not teach OSPF as an intra-autonomous system protocol.

Admitted Prior Art teaches OSPF as an intra-autonomous system protocol (OSPF is a widely deployed intra-AS protocol 4:19-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize OSPF as an intra-autonomous system protocol of Admitted Prior Art to the system of Ren to implement OSPF protocol in intra-autonomous environment.

23. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ren in view of Simpson (US 2002/0078232).

Ren substantially teaches the limitations of the claim: synchronizing said controller and neighbor state machines as the basic of OSPF algorithm [006], and said controller and delegate port card are synchronized (active card and standby cards are synchronized [0036]).

Ren does not teach updating of said controller by said delegate port card upon a new event being generated for said neighbor finite state machine.



Simpson teaches updating of said controller by said delegate port card upon a new event being generated for said neighbor finite state machine (deactivating the backup link and return to the primary link on the primary link recovery, Abstract, wherein new event is an inherent message from the backup card to the recovered active card to reactivate it as a primary card and updating of the controller/active card is the return to the active state).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add updating of said controller by said delegate port card upon a new event being generated for said neighbor finite state machine of Simpson to the system of Ren to improve the system flexibility by returning the recovered card into active service.

24. Claims 10, 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ren in view of RFC 2328 version 2 (OSPF protocol 1998, pages 1-106).

25. Regarding claim 10, Ren substantially teaches the limitations of the claim (see claims 1 and 14 rejection above) including forwarding/broadcasting the LSA/updates to the standby card [0025].

Ren does not teach said port cards provide retransmission and acknowledgement service. RFC 2328 teaches port cards provide retransmission and acknowledgement service (sending LSA acknowledgement packets on page 152 and retransmission on page 154).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize retransmission and acknowledgement service of RFC 2328 in the system of Ren to implement all features/mechanism of well-known protocol OSPF.

26. Regarding claims 11 and 12, Ren substantially teaches the limitations of the claim (see claims 1 and 14 rejection above) including synchronizing the active and standby cards.

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Ren does not teach flooding a tic timer to all delegate port cards and sending a delayed acknowledgement (after a given number of tics).

RFC 2328 teaches flooding mechanism and timers (flooding hello packets in Flooding procedure on page 96 and including timing in the LSA in Determining which LSA is newer on page 98), delayed LSA acknowledgements (sending LSA packets on Page 102).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize flooding of a tic timer of RFC 2328 to the system of Ren to synchronize all the standby/delegate cards with the active card/controller (regarding claim 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize delayed LSA acknowledgements and LSA tics, used for LSA aging, of RFC 2328 in the system of Ren to combine several acknowledgements in one LSA packet, as indicated in RFC 2328 on page 102 (regarding claim 12).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan  
Patent Examiner.  
11/01/05



**JOHN PEZZLO**  
**PRIMARY EXAMINER**